Utilizing Alfalfa Hay in Horse Diets

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All horses need fiber in their diets. Forages, usually as pasture or hay, are the primary sources of fiber in most rations. The exact amount of hay that a horse will eat on a daily or yearly basis will depend on the size of the horse, the class of the horse (pregnant, working, etc) and the type of hay being fed. The type and amount of other feeds in the ration will also impact the amount of hay consumed, but in general, horse owners/managers should try to maximize forage intake and then supplement with grain or other feeds to meet any unfulfilled requirements. Table 1 gives some general guidelines for hay consumption by horses of different classes. It should be noted that some horses, particularly horses at

Table 1. Approximate Daily Hay Consumption of Horses with Average Mature Weight of 1100 lb.

Type of Horse	Hay Intake[a] (lb/day)	Comments
Maintenance, Very Light Work, Early Gestation	20-25	More hay may be needed in cold temps; if alfalfa hay is fed, grain will usually not be necessary
Late Gestation, Light Work	18-22	Most horses will require a small amount of grain in addition to hay
Lactation	20-28	Most lactating mares will require at least 6-8 lb of grain in addition to hay
Yearling	15-25	Amount of hay and grain will vary depending upon age, type of hay and situation (sale preparation; breaking, etc)
Weanling	8-15	Amount of hay and grain will vary depending upon age and type of hay; most will receive 5-9 lb of grain/day
Performance Horse	15-25	Amount of hay and grain will vary depending upon level of work; most will receive 6-12 lb of grain/day

[a]Assumes horses have no access to pasture. When pasture is available, the amount of hay needed will be reduced.

maintenance, barren mares and horses in very light work can meet most, if not all, of their nutrient requirements with hay alone. Lactating mares, growing horses and horses in moderate to heavy work usually cannot eat enough hay to meet all of their requirements, and thus these horses will need some grain in their diets. When horses are being fed rations with large amounts of grain, they should still be fed **at least** 1 lb of hay for every 100 lb of body weight.

Horse owners and farm managers often ask about the advantages and disadvantages of using alfalfa hay instead of grass hay in their horse feeding programs. Some owners/managers will indicate that they have been told that alfalfa is the "best" hay for horses and others will indicate that they have heard that alfalfa is too "rich" for horses. Although these two statements seem completely contradictory, they both have elements of truth. In general, if alfalfa hay is selected and used appropriately, it is a very effective roughage source in horse rations. However, to make the best use of alfalfa hay, horse owners and managers must be able to match hay "quality" to the nutrient requirements of the particular horse (or horses) being fed.

Some quality criteria apply to all horse hays, regardless of the type of hay or the type of horse being fed. For example all horse hay should be free from mold, dust, weeds and debris. Beyond these general criteria, one can also consider such criteria as nutrient content, digestibility and palatability. These latter criteria can be markedly affected by hay type (grass vs legume) but also by the maturity of the plant at the time of cutting. As a legume, alfalfa is typically higher in protein and calcium than most grass hays. In some, but not all cases, alfalfa hay may also be higher in energy and total digestible nutrients than grass hay.

Stage of maturity at time of harvest can have a large effect on the nutrient content of alfalfa hay. In general, the older the plant is at the time of harvest the lower the nutrient content, digestibility and palatability. Plants harvested in late maturity will have more stem and less leaf than plants harvested in early maturity, and the stems will usually be thick and woody. Very early maturity alfalfa hay often has a soft texture, is very leafy, and has a high nutrient density and palatability. Horse owners/managers often select early maturity hay and discriminate against more mature hay; however both types of hay can be effectively used in horse feeding programs.

Ideally, horse feeding programs should combine nutritional adequacy with economic efficiency; that is, they should meet a horse's needs at an economical cost. Many nutrients can be provided more economically with roughage than with grain, and thus it is cost effective to maximize roughage use in most horse rations. Maximizing roughage use may also provide some non-nutritional benefits in that horses on high roughage rations may have more natural eating patterns. However, some horses cannot eat enough roughage to meet all of their nutritional needs, and those horses must receive some grain in their diets. In addition, some horses have difficulty eating enough total feed (grain and hay) to meet their nutrient requirements and these horses need feeds with high nutrient density (more nutrients/lb). Early maturity alfalfa hay can be very effective in feeding programs for horses with high nutrient requirements because it is very palatable and it provides more nutrients in less volume. Even though early maturity alfalfa hay is relatively expensive compared to other types of hay, it is still an economical way to provide many nutrients.

Early maturity alfalfa is not the most economical hay choice for all horses. Many horses have relatively low nutrient requirements and do not require feeds with high nutrient density. In fact, if early maturity alfalfa hay is fed to horses with low nutrient requirements, intake must be strictly controlled to avoid excessive nutrient consumption. For horses that have lower nutrient needs, feeds with lower nutrient density are appropriate. Horses with lower nutrient requirements can be fed mid-to-late maturity alfalfa hay, which is often much less expensive than early maturity hay. Table 2 gives some guidelines for the type of hay that can be fed to horses of different classes. Because alfalfa hay is quite high in protein and calcium, a feeding program based on alfalfa hay may provide levels of calcium and protein in excess of a horse's requirement. This situation will be most common when large amounts of alfalfa are fed to mature horses at maintenance or light work. Currently, there is no evidence to suggest that a moderate dietary excess of calcium or protein is detrimental to a mature horse.

Table 2. Matching Nutritional Value of Hay to Nutritional Need

Type of Hay	Description[a,b]	Type of Horse
Pre-Bloom Alfalfa	Very leafy, very fine stems; Very high nutrient density and palatability	Weanlings, Some Yearlings, Some Performance Horses, Poor Eaters
Early Bloom Alfalfa	Leafy, relatively fine stems, high nutrient density and palatability	Weanlings, Yearlings, Lactating Mares, Some Performance Horses
Mid-bloom Alfalfa	Somewhat stemmy, stems not fine. Moderate nutrient density and palatability	Some Weanlings, Yearlings, Lactating and Gestating Mares, Some Performance Horses, Horses at Maintenance
Late/Full Bloom Alfalfa	Very stemmy, stems are thick. Less palatable, especially to young horses.	Early Gestating Mares, Mature Horses in Light Work, Horses at Maintenance

[a]All hays for horses should be free of weeds, dust and mold.

[b]When alfalfa hay is fed, the calcium and protein requirements of many horses will be exceeded.

In summary, alfalfa hay can be an excellent feed source for many horses. Alfalfa is a good source of many nutrients including protein and calcium, and is a very palatable feed. The nutrient composition of alfalfa will vary with the maturity of the plant at the time of harvest and this will affect the suitability of the hay for feeding various classes of horses. Alfalfa hay cut in late maturity (full bloom) can be used for mature horses at maintenance or in light work and for mares in early pregnancy, while hay cut in early maturity (prebloom or early bloom) is useful in rations for young horses and horses in heavy work. Early maturity alfalfa hay must be fed carefully to horses with low nutrient requirements (such as horses at maintenance) to prevent horses from overeating. As with any hay, horse owners and managers must make sure that alfalfa hay is free from dust and mold.